



**Rules and
Regulations for
the Classification
of Special Service Craft,
July 2007**

Notice No. 1

Effective Date of Latest
Amendments:

See page 1

Issue date: April 2008

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RULES AND REGULATIONS FOR THE CLASSIFICATION OF SPECIAL SERVICE CRAFT, July 2007

Notice No. 1

This Notice contains amendments within the following Sections of the *Rules and Regulations for the Classification of Special Service Craft, July 2007*. The amendments are effective on the dates shown:

Part	Chapter	Section	Effective date
1	2	1, 3	1 July 2008
3	1	7	1 July 2008
3	2	4	1 July 2008
3	4	1	1 July 2008
4	2	9	1 July 2008
5	2	4	Corrigenda
5	3	2	1 July 2008
5	3	3	Corrigenda
5	4	2	1 July 2008
5	4	3	Corrigenda
6	6	1, 2	Corrigenda
6	7	4	1 July 2008
7	6	1	Corrigenda
7	7	4	1 July 2008
8	3	1	Corrigenda
9	1	1, 4	1 July 2008
10	1	8	1 July 2008
10	2	6	1 January 2008
11	2	4	1 July 2008
15	1	5	Corrigenda
15	1	12	1 January 2008
15	2	1, 11, 16	1 July 2008
15	3	3, 6	1 July 2008
16	1	5, 6	1 July 2008
16	2	1, 3, 5, 6, 7, 8, 10, 11, 16, 19	1 July 2008
17	1	1, 2	1 July 2008
17	3	1, 2, 3	1 July 2008

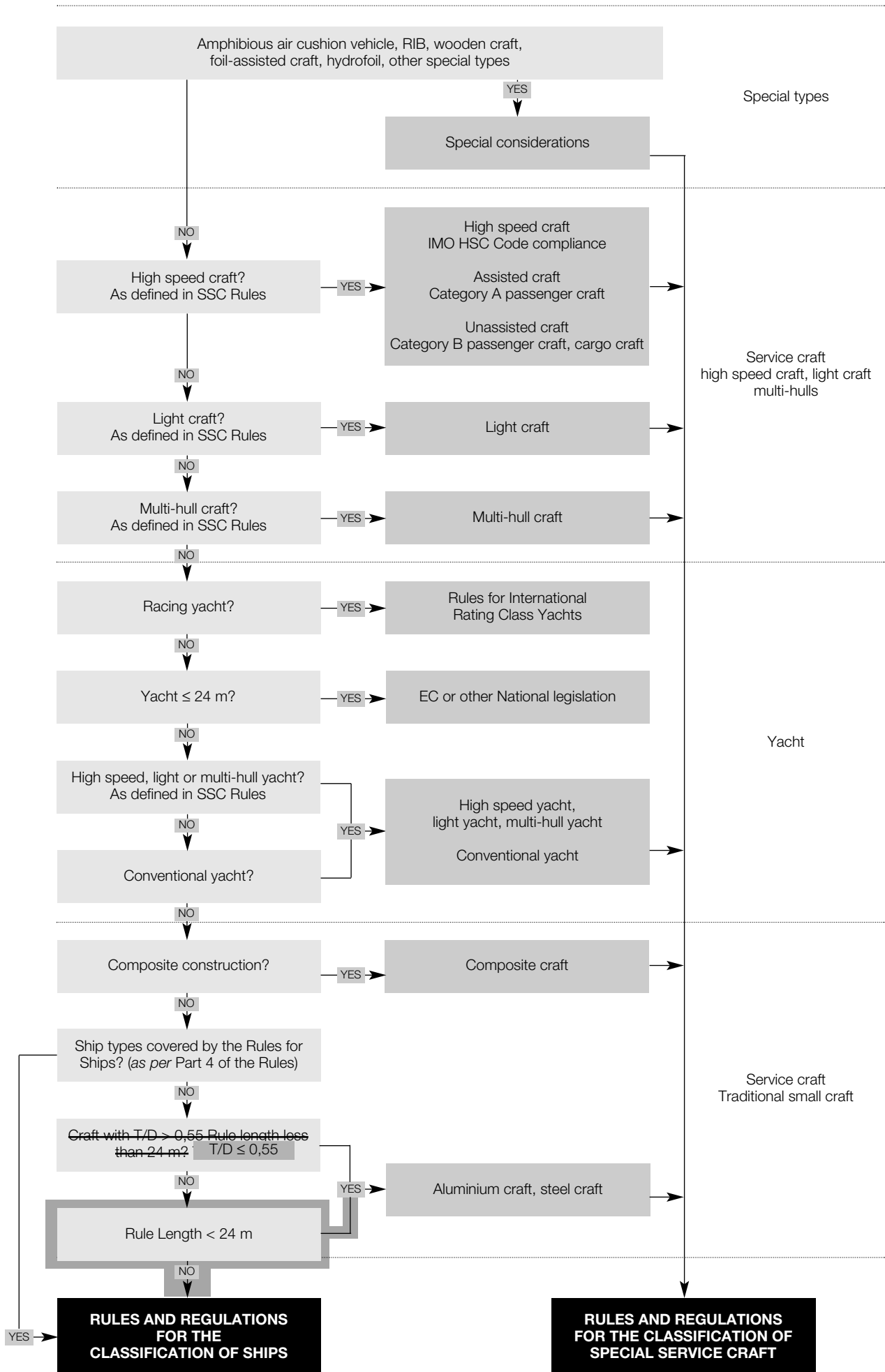
It will be noted that the amendments also include corrigenda, which are effective from the date of this Notice.

The *Rules and Regulations for the Classification of Special Service Craft, July 2007* are to be read in conjunction with this Notice No. 1. The status of the Rules is now:

Notice No. 1

Effective dates: 1 January 2008, 1 July 2008 & Corrigenda

DIFFERENT TYPES OF CRAFT COVERED BY THE SPECIAL SERVICE CRAFT RULES



Part 1, Chapter 2

Classification Regulations

Effective date 1 July 2008

■ Section 1

Conditions for classification

1.1 General

1.1.13 Yachts with an overall length, L_{OA} , as defined in Pt 3, Ch 1, of 24 m and over, having a service type notation of **Yacht** or **Yacht (P)**, see 3.6.2, will be assigned class only after it has been demonstrated that the intact stability of the yacht complies with the applicable standards laid down by IMO Resolution A.749(18), see Pt 4, Ch 2,8 and Ch 3,10, or the requirements of the National Administration where they are considered by LR to provide an equivalent standard. Possession of a Load Line Certificate issued in accordance with the requirements of the International Convention on Load Lines, 1966, will be accepted as evidence of compliance, see 1.1.11.

1.1.14 All yachts with a Rule length, L_R , as defined in Pt 3, Ch 1, greater than 50 m and other yachts requiring a service type notation of **Yacht (P)**, see 3.6.2, will be assigned class only after it has been demonstrated that their subdivision is sufficient to satisfy a one compartment standard of damage stability commensurate with that defined in SOLAS 1974, see Pt 4, Ch 2,9 or the requirements of the National Administration where they are considered by LR to provide an equivalent standard.

■ Section 3

Character of classification and class notations

3.6 Service type notations

(Part only shown)

3.6.2 A list of service type notations for which craft may be eligible is given below:

Yacht (P)	This notation will be assigned to all yachts with a Rule length, L_R , greater than 50 m, and other yachts requiring a Yacht (P) notation, which are built in accordance with the applicable requirements of these Rules and comply with: <ul style="list-style-type: none"> (a) Pt 4, Ch 2,9 Damage Stability (b) Pt 9, Ch 1,1.1.4 General Requirements for Machinery (c) Pt 16, Ch 2,1.1.1 Electrical Engineering (d) Pt 17, Ch 3,3 Fire Safety Measures for Yachts of Rule Length Greater than 50 m.
Yacht	This notation will be assigned to all yachts other than yachts assigned Yacht (P) .

3.10 Application notes

(Part only shown)

3.10.2 **Manufacturer's certificate** for assignment of the **[X]LMC** notation. Acceptance of the manufacturer's certificate for items of machinery for propulsion (including propulsion gearing with single input/output arrangements) and for electrical power generation and for other auxiliary machinery for essential services is subject to the following:

- (b) For a yacht: The yacht is not eligible for the **Yacht(P)** notation, is less than 500 gross tonnage or is of 500 gross tonnage or greater has a gross tonnage of less than 500, or has a gross tonnage of 500 or more and is not required to comply with international conventions applicable to a yacht with unrestricted service.

(Part only shown)

3.10.3 **Manufacturer's certificate** for assignment of the **MCH** notation. Acceptance of the manufacturer's certificate for propelling and essential auxiliary machinery is subject to the following:

- (b) For a yacht: The yacht is not eligible for the **Yacht(P)** notation, is less than 500 gross tonnage or is of 500 gross tonnage or greater more and is not required to comply with international conventions applicable to a yacht with unrestricted service.

Part 3, Chapter 1 General Regulations

Effective date 1 July 2008

■ Section 7 Inspection, workmanship and testing procedures

7.3 Testing procedures

Table 1.7.1 Testing requirements

Item to be tested	Testing procedure	Testing requirement
Double bottom tanks	Structural ⁽¹⁾	The greater of: – head of water up to the top of the overflow – head of water up to the margin line – head of water representing the maximum pressure experienced in service
Cofferdams	Structural ⁽¹⁾	The greater of: – head of water up to the top of the overflow – 1,8 m head of water above highest point of tank ⁽⁴⁾
Forepeak and aft peak used as tank ⁽³⁾	Structural	
Tank bulkheads	Structural ⁽¹⁾	The greater of: – head of water up to the top of the overflow – 1,8 m head of water above the highest point of tank ⁽⁴⁾ – setting pressure of the safety valves, where relevant
Deep tanks	Structural ⁽¹⁾	
Scupper and discharge pipes in way of tanks	Structural ⁽¹⁾	
Double plate rudders	Structural ^{(1), (5)}	2,4 m head of water, and rudder should normally be tested while laid on its side
Watertight bulkheads, shaft tunnels, flats and recesses, etc.	Hose ⁽²⁾	See 7.3.5
Watertight doors (below freeboard or bulkhead deck) when fitted in place	Hose ⁽⁶⁾	
Weathertight hatch covers and closing appliances	Hose	
Forepeak not used as tank	Hose ⁽²⁾	
Shell doors when fitted in place	Hose ⁽⁷⁾	
Chain locker, if aft of collision bulkhead	Structural	Head of water up to the top
Separate oil fuel tanks	Structural	Head of water representing the maximum pressure which could be experienced in service, but not less than 3,5 m
After peak not used as tank	Leak	See 7.3.4

NOTES

1. Leak or hydropneumatic testing may be accepted, provided that at least one tank of each type is structurally tested, to be selected in connection with the approval of the design. (See also 7.3.9 and 7.3.10).
2. When hose testing cannot be performed without damaging possible outfittings already installed, it may be replaced by a careful visual inspection of all the crossings and welded joints. Where necessary, dye penetrant test or ultrasonic leak test may be required.
3. Testing of the aft peak is to be carried out after the sterntube has been fitted.
4. The highest point of the tank is generally to exclude hatchways. In holds for liquid cargo or ballast with large hatch openings, the highest point of the tank is to be taken to the top of the hatch.
5. If leak or hydropneumatic testing is carried out, arrangements are to be made to ensure that no pressure in excess of 0,30 bar (0,30 kgf/cm²) can be applied.
6. See also SOLAS Reg. II-1/18. Where the door has been subject to the full hydrostatic test before installation, the hose test may be replaced by careful visual examination.
7. For shell doors providing watertight closure, watertightness is to be demonstrated through prototype testing before installation. The testing procedure is to be agreed with LR.

Part 3, Chapter 2

Craft Design

Effective date 1 July 2008

Section 4

Bulkhead arrangements

4.3 Collision bulkhead

(Part only shown)

4.3.2 The collision bulkhead in passenger craft, patrol craft and yachts is to be in accordance with the following:

Table 2.4.3 Collision bulkhead for passenger craft, patrol craft and yachts

Arrangement	Distance of collision bulkhead aft of fore perpendicular, in metres	
	Minimum	Maximum
(a)	$0,05L_{pp}$	$3 + 0,05L_{pp}$
(b)	$0,05L_{pp} - f$	$3 + 0,05L_{pp} - f$
Symbols and definitions		
$f = \frac{G}{2}$ or $0,015L_{pp}$, whichever is the lesser G = projection of bulbous bow forward of fore perpendicular, in metres L_{pp} is to be taken as the length measured between the extremities of the deepest subdivision waterline, as defined in Ch 1, 6.2		
Arrangement (a)	A craft that has no part of its underwater body extending forward of the fore perpendicular.	
Arrangement (b)	A craft with part of its underwater body extending forward of the fore perpendicular, e.g. bulbous bow.	

Part 3, Chapter 4

Closing Arrangements and Outfit

Effective date 1 July 2008

Section 1

General

1.1 Application

~~1.1.2 Where relevant, the contents of this Chapter conform with the requirements of the International Convention on Load Lines, 1966.~~

Existing paragraphs 1.1.3 and 1.1.4 are to be renumbered 1.1.2 and 1.1.3.

Part 4, Chapter 2 All Yachts

Effective date 1 July 2008

■ Section 9 Damage stability

9.1 Application

9.1.1 The requirements of this Section apply to all yachts with a Rule length, L_R , greater than 50 m, and other yachts requiring a **YACHT(P)** notation, see Pt 1, Ch 2, 1.1.14, that are 500 gt or more.

9.1.2 Consideration will be given to the acceptance of damage stability requirements that have been prescribed and approved by the Flag State, provided they are deemed by LR to provide an acceptable level of safety.

Part 5, Chapter 2 Local Design Loads

CORRIGENDA

■ Section 4 Loads on shell envelope

4.4 Hydrodynamic wave pressure

4.4.3 The distribution of hydrodynamic pressure up to the operating waterline, P_p , is to be taken as:

$$P_p = 10H_{pm} \text{ kN/m}^2$$

where

$$H_{pm} = 1,1 \left(\frac{2x_{wl}}{L_{WL}} - 1 \right) L_{WL}$$

but not less than $f_L L_{WL}$

$$\begin{aligned} f_L &= 0,6 && \text{for } L_{WL} < 60 \\ &= 1,5 - 0,015L_{WL} && \text{for } 60 \geq L_{WL} \geq 80 \\ &= 0,3 && \text{for } L_{WL} > 80 \end{aligned}$$

L_{WL} = as defined in 2.1.19, but not greater than 150 m
 x_{wl} is defined in 3.1.

Part 5, Chapter 3

Local Design Criteria for Craft Operating in Non-Displacement Mode

Effective date 1 July 2008

■ Section 2

Nomenclature and design factors

2.2 Design factors

Table 3.2.3 Service type notation factor, S_f

Service type notation	Factor
Cargo (A)	1,0
Cargo (B)	1,1
Passenger	1,0
Passenger (A)	1,0
Passenger (B)	1,1
Patrol	1,2
Pilot	1,25
Yacht (P)	1,1
Yacht	1,1
Workboat	1,25

CORRIGENDA

■ Section 3

Hull envelope design criteria

3.1 Hull structures

Table 3.3.1 Design pressures for non-displacement craft (Part only shown)

Components							
Weather deck (see Note 1)		P_{WDP}	Greater of $H_f S_f G_f C_f P_{wl}$ (see Note 1) P_{cd}	7	P_{WDF}	Greater of $\delta_f H_f S_f G_f C_f P_{wl}$ P_{cd}	7
Coachroof (see Note 1)		P_{CRP}	$H_f S_f G_f C_f P_{wl}$ (see Note 1)	7	P_{CRF}	$\delta_f H_f S_f G_f C_f P_{wl}$	7
Interior deck		P_{IDP}	Greater of $H_f S_f C_f P_{wl}$ P_{cd}	3,5	P_{IDF}	Greater of $\delta_f H_f S_f C_f P_{wl}$ P_{cd}	3,5
Deckhouses, bulwarks and superstructure		P_{DHP}	$H_f S_f G_f C_f P_{dhp}$		P_{DHF}	$\delta_f H_f S_f G_f C_f P_{dhp}$	
Inner bottom		P_{IBP}	$H_f S_f P_m + P_h$	10T	P_{IBF}	$\delta_f (H_f S_f P_m + P_h)$	10T
Watertight and deep tank bulkheads		P_{BHP}	P_{bh}		P_{BHF}	P_{bh}	
NOTES 1. G_f is not to be taken less than 1,0. 2. The result of each row in each cell is found as the product of all items on that row in that cell.							

Part 5, Chapter 4

Local Design Criteria for Craft Operating in Displacement Mode

Effective date 1 July 2008

■ Section 2

Nomenclature and design factors

2.2 Design factors

Table 4.2.2 Service type notation factor, S_f

Service type notation factor	Factor
Cargo (A)	1,0
Cargo (B)	1,1
Passenger	1,0
Passenger (A)	1,0
Passenger (B)	1,1
Patrol	1,2
Pilot	1,25
Yacht (P)	1,1
Yacht	1,1
Workboat	1,25

CORRIGENDA

■ Section 3

Hull envelope design criteria

3.1 Hull structures

Table 4.3.1 Design pressures for displacement craft (Part only shown)

Components							
Weather deck (see Note 1)		P_{WDP}	Greater of $H_f S_f G_f C_f P_{wl}$ (see Note 1) P_{cd}	7	P_{WDF}	Greater of $\delta_f H_f S_f G_f C_f P_{wl}$ P_{cd}	7
Coachroof (see Note 1)		P_{CRP}	$H_f S_f G_f C_f P_{wl}$ (see Note 1)	7	P_{CRF}	$\delta_f H_f S_f G_f C_f P_{wl}$	7
Interior deck		P_{IDP}	Greater of $H_f S_f C_f P_{wl}$ P_{cd}	3,5	P_{IDF}	Greater of $\delta_f H_f S_f C_f P_{wl}$ P_{cd}	3,5
Deckhouses, bulwarks and superstructure		P_{DHP}	$H_f S_f G_f C_f P_{dhp}$		P_{DHF}	$\delta_f H_f S_f G_f C_f P_{dhp}$	
Inner bottom		P_{IBP}	$H_f S_f P_m + P_h$	10T	P_{IBF}	$\delta_f (H_f S_f P_s P_m + P_h)$	10T
Watertight and deep tank bulkheads		P_{BHP}	P_{bh}		P_{BHF}	P_{bh}	
NOTES 1. G_f is not to be taken less than 1,0. 2. The result of each row in each cell is found as the product of all items on that row in that cell.							

Part 6, Chapter 6 Hull Girder Strength

CORRIGENDA

■ Section 1 General

1.4 Openings

1.4.1 Deck openings having a length in the fore and aft directions exceeding $0,1B$ m or a breadth exceeding ~~$0,5B$~~ $0,05B$ m are in all cases to be deducted from the sectional areas used in the section modulus calculation.

■ Section 2 Hull girder strength for mono-hull craft

2.3 Minimum hull section modulus

2.3.1 For patrol craft in Service Group G6, the hull midship modulus about the transverse neutral axis, at the deck or the keel, is to be not less than:

$$Z_{\min} = \eta_{\text{HTS}} L_f L_R^2 B_{\text{WL}} (C_b + 0,7) \times 10^{-6} \text{ m}^3$$

where

η_{HTS} is as defined in Ch 2,2.4.3

L_R and C_b are as given in Pt 5, Ch 2,2.2.2

C_b to be taken not less than 0,6

L_f is as given in Pt 5, Ch 5,2.2.2

B_{WL} = maximum breadth at the design waterline, in metres.

Part 6, Chapter 7 Failure Modes Control

Effective date 1 July 2008

■ Section 4 Buckling control

4.8 Secondary stiffening perpendicular to direction of compression

(Part only shown)

4.8.2 The minimum ~~area~~ moment of inertia of each stiffener including attached ~~effective~~ plating of width, ~~b_{eff}~~ s , to ensure that overall panel buckling does not precede plate buckling is to be taken as:

Part 7, Chapter 6 Hull Girder Strength

CORRIGENDA

■ Section 1 General

1.4 Openings

1.4.1 Deck openings having a length in the fore and aft directions exceeding $0,1B$ m or a breadth exceeding ~~$0,5B$~~ $0,05B$ m are in all cases to be deducted from the sectional areas used in the section modulus calculation.

Part 7, Chapter 7 Failure Modes Control

Effective date 1 July 2008

■ Section 4 Buckling control

4.8 Secondary stiffening perpendicular to direction of compression

(Part only shown)

4.8.2 The minimum area moment of inertia of each stiffener including attached effective plating of width, b_{eff} , to ensure that overall panel buckling does not precede plate buckling is to be taken as:

Part 8, Chapter 3 Scantling Determination for Mono-Hull Craft

CORRIGENDA

■ Section 1 General

1.13 Mechanical properties sandwich laminates

(Part only shown)

1.13.14 Where the Poisson's ratio, ν_f , for a particular facing laminate is known, the deflection, δ , of a flat sandwich panel with all edges assumed to be fully fixed, and subjected to a uniform lateral pressure is to be determined from:

$$\delta = \frac{p b^2}{8t_c} \left(\frac{b^2(1-\nu_f^2)}{24E_{ms}t_s t_c} + \frac{1}{G} \right) \times 10^{-3} \text{ mm}$$

where the mean skin thickness modulus, E_{ms} , is given by:

Part 9, Chapter 1

General Requirements for Machinery

Effective date 1 July 2008

■ Section 1

General requirements

1.1 Application

1.1.4 Special requirements are included for main and auxiliary machinery, pumping and piping, electrical and control engineering and fire extinction for yachts having the notation **YACHT (P)** that are 500 gt or more.

■ Section 4

Operating conditions

4.4 Ambient operating conditions

4.4.2 Where it is intended to allow for operation in ambient temperatures outside those shown in Table 1.4.2, the permissible temperatures and associated periods of time are to be specified and details are to be submitted for consideration. Propelling and essential auxiliary machinery, see Pt 1, Ch 2, 3.10.1, is to retain a continuous level of functional capability under these conditions and any level of degraded performance is to be defined. Operation under these circumstances is not to be the cause of damage to equipment in the system and is additionally to be acceptable to the National Authority of the country in which the craft is to be registered

Table 1.4.2 Ambient operating conditions

Air		
Installations, Components	Location, arrangement	Temperature range (°C)
Machinery and electrical installations	In enclosed spaces	0 to +45, see Note 1
	On machinery components, boilers. In spaces subject to higher and lower temperatures	According to specific local conditions, see Note 2
	On the open deck	-25 to +45, see Note 1
Water		
Coolant		Temperature (°C)
Sea-water or charge air coolant inlet to charge air cooler		-2 to +32, see Notes 1 and 3
NOTES		
1. For ships intended to be classed for restricted service, a deviation from the temperatures stated may be considered.		
2. Details of local environmental conditions are stated in Annex B of IEC 60092: <i>Electrical installations in ships – Part 101: Definitions and general requirements</i> .		
3. Charge air cooling arrangements utilising re-circulated cooling to maintain temperatures in a different range are accepted where the machinery and equipment operation is not degraded with a primary supply of cooling in the temperature range stated in this Table.		

Part 10, Chapter 1 Diesel Engines

Effective date 1 July 2008

■ Section 8 Piping systems

8.4 Lubricating oil systems

8.4.2 Where the lubricating oil for main propelling engines is circulated under pressure, provision is to be made for the efficient filtration of the oil. The filters are to be capable of being cleaned without stopping the engine or reducing the supply of filtered oil to the engine. Proposals for an automatic by-pass for emergency purposes in high speed engines are to be submitted for special consideration.

Part 10, Chapter 2 Gas Turbines

Effective date 1 January 2008

■ Section 6 Starting arrangements

6.2 Purging before ignition

6.2.1 Means are to be provided, preferably automatic or interlocked, to clear all parts of the gas turbine of the accumulation of liquid oil fuel or for purging gaseous fuel before ignition commences on starting, or recommences after failure to start. The purge is to be of sufficient duration to displace at least three times the volume of the exhaust system.

Part 11, Chapter 2 Shafting Systems

Effective date 1 July 2008

■ Section 4 Design and construction

4.7 Coupling bolts

4.7.3 Where dowels or expansion bolts are fitted to transmit torque in shear they are to comply with the requirements of 4.7.1. The expansion bolts are to be installed, and the bolt holes in the flanges are to be correctly aligned in accordance with manufacturer's instructions.

(Part only shown)

4.7.3 4.7.4 The minimum diameter of tap bolts or of bolts in clearance holes at the joining faces of coupling flanges, pretensioned to 70 per cent of the bolt material yield strength value, is not to be less than:

$Q =$ external load on bolt in N (+ve tensile load tending to separate flange, -ve)

4.7.4 4.7.5 Consideration will be given to those arrangements where the bolts are pretensioned to loads other than 70 per cent of the material yield strength.

4.7.6 Where clamp bolts are fitted they are to comply with the requirements of 4.7.4 and are to be installed, and the bolt holes in the flanges correctly aligned, in accordance with manufacturer's instructions.

Part 15, Chapter 1

Piping Design Requirements

CORRIGENDA

■ Section 5

Carbon and low alloy steels

5.1 General

(Part only shown)

5.1.2 The minimum thickness, t , of straight steel pressure pipes is to be determined by the following formula:

$$t = \left(\frac{pD}{20\sigma_e + p} + G \right) \frac{100}{100 - a} \text{ mm}$$

Effective date 1 January 2008

■ Section 12

Requirements for valves

12.1 General

12.1.2 Valves are to be made of steel, cast iron, copper alloy, or other approved material suitable for the intended purpose.

~~12.1.3 All valves are to be arranged to shut with a right-hand (clockwise) motion of the wheels and are to be provided with indicators showing whether they are open or shut unless this is readily obvious.~~ Valves having isolation or sealing components sensitive to heat are not to be used in spaces where leakage or failure caused by fire could result in fire spread, flooding or the loss of an essential service.

12.1.4 Where valves are required to be capable of being closed remotely in the event of fire, the valves, including their control gear, are to be of steel construction or of an acceptable fire tested design.

12.1.5 Valves are to be arranged for clockwise closing and are to be provided with indicators showing whether they are open or shut unless this is readily obvious.

~~12.1.2~~ 12.1.6 All valves are to be so constructed as to prevent the possibility of valve covers or glands being slackened back or loosened when the valves are operated.

~~12.1.4~~ 12.1.7 Valves and cocks are to be fitted with legible nameplates, and, unless otherwise specifically mentioned in the Rules, the valves and cocks are to be fitted in places where they are at all times readily accessible.

12.1.8 Valves are to be used within their specified pressure and temperature rating for all normal operating conditions, and are to be suitable for the intended purpose.

12.1.9 Valves intended for submerged installation are to be suitable for both internal and external media. Spindle sealing is to prevent ingress of external media at the maximum external pressure head expected in service.

~~12.1.5~~ 12.1.10 Additional requirements for shell valves are given in Ch 2, 3.

Part 15, Chapter 2

Hull Piping Systems

Effective date 1 July 2008

■ Section 1

General

1.1 Application

1.1.6 Additional requirements for craft to be assigned the ~~Yacht (P) notation~~ for yachts that are 500 gt or more are given in Section 16.

■ Section 11

Air, overflow and sounding pipes

11.13 Sounding arrangements for oil fuel, lubricating oil and other flammable liquids

11.13.3 If closed sounding devices are fitted, failure of the device or over filling of the tank is not to result in the release of tank contents. In passenger craft and yachts ~~with Yacht (P) notation~~ that are 500 gt or more, such means are not to require penetration below the top of the tank.

Part 15, Chapters 2 & 3 & Part 16, Chapter 1

11.13.7 In yachts assigned **Yacht (P)** notation For yachts that are 500 gt or more, where short sounding pipes serve tanks containing oil fuel, an additional sounding device of approved type is to be fitted. In addition, a small diameter self-closing test cock is to be fitted below the cock mentioned in 11.13.6, in order to ensure that the sounding pipe is not under pressure from oil fuel before opening up the sounding pipe.

■ Section 16 Additional requirements for yachts to be assigned the **Yacht (P)** notation that are 500 gt or more

16.1 General

16.1.1 Where craft are to be assigned the **Yacht (P)** notation they Yachts that are 500 gt or more are to comply with Section 15 of this Chapter and in addition the following requirements.

Part 15, Chapter 3 Machinery Piping Systems

Effective date 1 July 2008

■ Section 3 Oil fuel storage

3.3 Oil fuel storage arrangements for yachts and service craft of 24 m or greater in length, which are not required to comply with the HSC Code

3.3.4 Where craft are to be assigned the **Yacht (P)** notation For yachts that are 500 gt or more, free standing oil fuel tanks are not to be fitted in machinery spaces, see Pt 17, Ch 3, 3.17.3.

■ Section 6 Lubricating/hydraulic oil systems

6.1 Lubricating oil arrangements

6.1.4 Where the lubricating oil for main propelling engines is circulated under pressure, provision is to be made for the efficient filtration of the oil. The filters are to be capable of being cleaned without stopping the engine or reducing supply of filtered oil to the engine. Proposals for an automatic by-pass for emergency purposes in high speed engines are to be submitted for consideration.

6.1.4 6.1.5 In addition, craft of 24 m or greater in length are to comply with the requirements of 4.1 and 4.5 to 4.7.

Part 16, Chapter 1 Control Engineering Systems

Effective date 1 July 2008

■ Section 5 Requirements for craft which are not required to comply with the HSC Code

5.1 General

5.1.3 For yachts which do not require the notation **YACHT (P)** less than 500 gt and small craft not requiring the **UMS** and **CCS** notation, the requirements of 5.2 and 5.3 apply.

5.1.4 Yachts with the notation **YACHT (P)** that are 500 gt or more are to comply with the requirements of Sections 1 and 2.

■ Section 6 Trials

6.1 General

6.1.3 Acceptance tests and trials for Programmable Electronic Systems are to include verification of software lifecycle activities appropriate to the stage in the system's lifecycle at the time of system examination.

Part 16, Chapter 2

Electrical Engineering

Effective date 1 July 2008

■ Section 1

General requirements

1.1 General

1.1.1 The requirements of Sections 1 to 18 and 20 are, in general, applicable to all the craft types indicated in Pt 1, Ch 2,2.1, with the exception of cargo craft, patrol and pilot craft, workboats and other similar craft of less than 500 tons gross tonnage for operation in Service Groups 1 to 3, and for yachts ~~not having the notation Yacht (P)~~ less than 500 gt, which are covered in Section 19.

■ Section 3

Emergency source of electrical power

3.1 General

3.1.1 The requirements of this Section apply to passenger craft, to yachts ~~having the notation Yacht (P)~~ that are 500 gt or more, to cargo craft, patrol and pilot craft, workboats and other similar craft of 500 tons gross tonnage and above, and to cargo craft, patrol and pilot craft, workboats and other similar craft of less than 500 tons gross tonnage for operation in Service Groups 4 and 5. For other craft, see Section 19.

3.2 Emergency source of electrical power in passenger craft and for yachts ~~having the notation Yacht (P)~~ that are 500 gt or more

~~3.2.3 The location of the emergency source of electrical power and associated transforming equipment, if any, the transitional source of emergency power, the emergency switchboard and the emergency lighting switchboard in relation to the main source of electrical power, associated transforming equipment, if any, and the main switchboard is to be such as to ensure that a fire or other casualty in spaces containing the main source of electrical power, associated transforming equipment, if any, and the main switchboard or in any machinery space of Category A will not interfere with the supply, control and distribution of emergency electrical power. The space containing the emergency source of electrical power, associated transforming equipment, if any, the transitional source of emergency electrical power and the emergency switchboard is not to be contiguous to the boundaries of machinery spaces of Category A and those spaces containing the main source of electrical power, associated transforming equipment, if any, or the main switchboard.~~

3.2.3 The location of:

- the emergency source of electrical power and associated transforming equipment, if any;
- the transitional source of emergency power;
- the emergency switchboard; and
- the emergency lighting switchboard;

in relation to:

- the main source of electrical power, associated transforming equipment, if any; and
- the main switchboard;

is to be such as to ensure that a fire or other casualty in spaces containing:

- the main source of electrical power, associated transforming equipment, if any, and the main switchboard; or
- in any machinery space of Category A;

will not interfere with the supply, control and distribution of emergency electrical power.

3.2.4 The space containing:

- the emergency source of electrical power, associated transforming equipment, if any;
- the transitional source of emergency electrical power; and
- the emergency switchboard;

is not to be contiguous to the boundaries of machinery spaces of Category A or those spaces containing:

- the main source of electrical power, associated transforming equipment, if any; or
- the main switchboard.

3.2.5 Where compliance with 3.2.3 or 3.2.4 is not practicable, details of the proposed arrangements are to be submitted.

Existing paragraphs 3.2.4 to 3.2.14 are to be renumbered 3.2.6 to 3.2.16

~~3.2.12~~ 3.2.14 In order to ensure the ready availability of the emergency source of electrical power to supply emergency circuits required to provide emergency services, arrangements are to be made, where necessary, to automatically disconnect non-emergency circuits from the emergency switchboard to ensure that electrical power is available to the emergency circuits. The arrangements are to automatically disconnect sufficient non-emergency loads to ensure continued safe operation of the emergency source of electrical power in the event of overloading to ensure that electrical power is available to the emergency circuits.

Part 16, Chapter 2

3.3 Emergency source of electrical power in craft required to comply with the HSC Code

~~3.3.3 The location of the emergency source of electrical power and associated transforming equipment, if any, the transitional source of emergency power, the emergency switchboard and the emergency lighting switchboard in relation to the main source of electrical power, associated transforming equipment, if any, and the main switchboard are to be such as to ensure that a fire or other casualty in the space containing the main source of electrical power, associated transforming equipment, if any, and the main switchboard, or in any machinery space will not interfere with the supply, control and distribution of emergency electrical power. The space containing the emergency source of electrical power, associated transforming equipment, if any, the transitional source of emergency electrical power and the emergency switchboard is not to be contiguous to the boundaries of machinery spaces or those spaces containing the main source of electrical power, associated transforming equipment, if any, and the main switchboard.~~

3.3.3 The location of:

- the emergency source of electrical power and associated transforming equipment, if any;
- the transitional source of emergency power;
- the emergency switchboard; and
- the emergency lighting switchboard;

in relation to:

- the main source of electrical power, associated transforming equipment, if any, and;
- the main switchboard;

is to be such as to ensure that a fire or other casualty in spaces containing:

- the main source of electrical power, associated transforming equipment, if any, and the main switchboard;
- or in any machinery space;

will not interfere with the supply, control and distribution of emergency electrical power.

3.3.4 The space containing:

- the emergency source of electrical power, associated transforming equipment, if any;
- the transitional source of emergency electrical power; and
- the emergency switchboard;

is not to be contiguous to the boundaries of machinery spaces and those spaces containing:

- the main source of electrical power, associated transforming equipment, if any; or
- the main switchboard.

3.3.5 Where compliance with 3.3.3 or 3.3.4 is not practicable, details of the proposed arrangements are to be submitted.

Existing paragraphs 3.3.4 to 3.3.10 are to be renumbered 3.3.6 to 3.3.12

Section 5

Supply and distribution

5.3 Isolation and switching

5.3.2 Isolation and switching is to be by means of a circuit breaker or switch arranged to open and close simultaneously all insulated poles. Where a switch is used as the means of isolation and switching, it is to be capable of:

- (a) switching off the circuit on load;
- (b) withstanding, without damage, the overcurrents which may arise during overloads and short circuit.

In addition, these requirements do not preclude the provision of single pole control switches in final sub-circuits, for example light switches. For circuit-breakers, see 6.5 and 7.3.

Section 6

System design – Protection

6.1 General

6.1.3 The protection of circuits is to be such that a fault in a circuit does not cause the interruption of supplies used to provide emergency or essential services other than those dependent on the circuit where the fault occurred. For circuits used to provide essential services which need not necessarily be in continuous operation to maintain propulsion and steering but which are necessary for maintaining the vessel's safety, arrangements that ensure that a fault in a circuit does not cause the sustained interruption of supply to healthy circuits may be accepted. Such arrangements are to ensure the supply to healthy circuits is automatically re-established in sufficient time after a fault in a circuit.

Existing paragraphs 6.1.3 to 6.1.9 are to be renumbered 6.1.4 to 6.1.10.

~~6.1.6~~ ~~6.1.7~~ ~~Except where arrangements comply with 11.3.5, p 11.3.5, p~~ Protection for battery circuits is to be provided at a position external and adjacent to the battery compartments. Where arrangements comply with 11.3.5, the protection may be installed at a suitable location in the battery compartment

6.5 Circuit-breakers

(Part only shown)

6.5.1 Circuit-breakers for alternating current systems are to satisfy the following conditions:

- (a) the r.m.s. symmetrical breaking current for which the device is rated is to be not less than the r.m.s. value of the a.c. component of the prospective fault current, at the instant of contact separation first half cycle ;

6.5.4 To satisfy 6.5.3, the rated service short-circuit breaking capacity of low voltage circuit-breakers:

- directly connected to main or emergency switchboard; and/or
- installed in the feeder lines for circuits used to provide essential or emergency services;

is to be not less than the prospective fault current referred to in 6.5.1(a). Low voltage circuit-breakers for other circuits may be selected on the basis of their rated ultimate short-circuit breaking capacity.

6.5.5 The rated short-time withstand current of low voltage circuit-breakers which are required to have an intentional short-time delay under short-circuit conditions to ensure discriminative action with respect to other protective devices is to be not less than the r.m.s. value of the a.c. component of the prospective fault current, at the first half cycle.

■ Section 7 Switchgear and control gear assemblies

7.1 General requirements

7.1.1 Switchgear and control gear assemblies and their components are to comply with one of the following standards amended where necessary for ambient temperature and other environmental conditions:

- IEC 60439: *Low voltage switchgear and control gear assemblies*;
- ~~IEC 60298: AC Metal enclosed switchgear and control gear for rated voltages above 1 kV and up to and including 72.5 kV~~ IEC 62271-200: *AC metal-enclosed switchgear and controlgear for rated voltages above 1 kV and up to and including 52 kV*;
- IEC 60466: *AC insulated-enclosed switchgear for rated voltages above 1 kV and up to and including 38 kV*;
- IEC 60255: *Electrical relays*;
- acceptable and relevant National Standard.

In addition, the requirements of 7.2 to 7.18 are to be complied with.

7.3 Circuit-breakers

7.3.2 Circuit-breakers are to be capable of isolation.

Existing paragraphs 7.3.2 and 7.3.3 are to be renumbered 7.3.3 and 7.3.4.

7.12 Instrument scales

7.12.4 Where the indications provided by the instrumentation required by 7.11 are displayed digitally, nominal voltage, over voltage, over current and reverse power indications are to be indicated by an appropriate means. The information provided is to be clearly visible and immediately available.

7.16 Position of switchboards

7.16.5 For switchgear and control gear assemblies, for rated voltages above 1 kV, arrangements are to be made to protect personnel in the event of gases or vapours escaping under pressure as the result of arcing due to an internal fault.

Where personnel may be in the vicinity of the equipment when it is energised, this may be achieved by an assembly that has been tested in accordance with Annex A of IEC 62271- 200 and qualified for classification **IAC** (internal arc classification).

7.18 Testing

7.18.5 For switchgear and control gear assemblies, for rated voltages above 1 kV, type tests are to be carried out, in accordance with ~~an appropriate Standard~~ Annex A of IEC 62271-200 and **IAC** (internal arc classification) assigned, to verify that the assembly will withstand the effects of an internal arc occurring within the enclosure at a prospective fault level equal to, or in excess of, that of the installation.

■ Section 8 Rotating machines

8.4 Generator control

8.4.5 Generators and their voltage regulation systems are to be capable of maintaining, without damage, under steady state short circuit conditions a current of at least three times the full load rated current for a duration of at least two seconds or where precise data is available for the duration of any longer time delay which may be provided by a tripping device for discrimination purposes.

■ Section 10 Electrical cables and busbar trunking systems (busways)

10.6 Conductor size

10.6.3 The cable current ratings given in Tables 2.10.3 and 2.10.4 are based on the maximum rated conductor temperatures given in Table 2.10.2. When cable sizes are selected on the basis of precise evaluation of current rating based upon experimental and calculated data, details are to be submitted for consideration. Alternative short-circuit temperature limits, other than those given in Table 2.10.4, may be ~~calculated~~ **applied** using the ~~method~~ data provided in :

- ~~IEC 60724: Guide to the short circuit temperature limits of electric cables~~ Short-circuit temperature limits of electric cables with rated voltages of 1kV ($U_m=1,2kV$) and 3kV ($U_m=3,6kV$); or
- IEC 60986: *Short-circuit temperature limits of electric cables with rated voltages from 6kV ($U_m=7,2kV$) and up to 30kV ($U_m=36kV$).*

Alternative short-circuit temperature limits provided in an acceptable and relevant National Standard may also be considered.

Part 16, Chapter 2

10.8 Installation of electric cables

10.8.2 Bends in fixed electric cable runs are to be in accordance with the cable manufacturer's recommendations. The minimum internal radius of bend for the installation of fixed electric cables is to be chosen according to the construction and size of the cable and is not to be less than the values given in Table 2.10.6.

Table 2.10.6 Minimum internal radii of bends in cables for fixed wiring

Cable construction		Overall diameter of cable	Minimum internal radius of bend (times overall diameter of cable)
Insulation	Outer covering		
Thermoplastic and elastomeric 600/1000 V and below	Metal sheathed Armoured and braided	Any	6D
	Other finishes	≤ 25 mm > 25 mm	4D 6D
Mineral	Hard metal sheathed	Any	6D
Thermoplastic and elastomeric above 600/1000 V – single core – multicore	Any	Any	20D 12D
	Any	Any	16D 9D

■ Section 11 Batteries

11.3 Location

11.3.11 A permanent notice is to be prominently displayed adjacent to battery installations advising personnel that replacement batteries are to be of an equivalent performance type. For valve-regulated sealed batteries, the notice is to advise of the requirement for replacement batteries to be suitable with respect to products of electrolysis and evaporation being allowed to escape from cells to the atmosphere, see also 1.4.3.

11.5 Ventilation

11.5.4 Mechanical exhaust ventilation complying with 11.5.9 is to be provided for battery installations connected to a charging device with a total maximum power output of more than 2 kW and also, to minimise the possibility of oxygen enrichment, compartments and spaces containing batteries with boost charging facilities are to be provided with mechanical exhaust ventilation irrespective of the charging device power output.

11.5.5 The ventilation system for battery compartments and boxes, other than boxes located on open deck or in spaces to which 11.3.2 and 11.3.3 and 11.3.5 refer, is to be separate from other ventilation systems. The exhaust ducting is to be led to a location in the open air, where any gases can be safely diluted, away from possible sources of ignition and openings into spaces where gases may accumulate.

■ Section 16 Fire safety systems

16.6 Fire safety stops

16.6.11 Additionally, Passenger (B) high speed craft are to be provided with the means required by 16.5.6 at ~~an~~ one or more alternative stations separate from the bridge area. See also Ch 1,2.6.7.

■ Section 19 Cargo craft, patrol and pilot craft, workboats and other similar craft of less than 500 tons gross tonnage for operation in Service Groups 1 to 3, and yachts ~~not~~ ~~having the notation Yacht (P)~~ less than 500 gt

Part 17, Chapter 1

Fire Protection, Detection and Extinction - General

Effective date 1 July 2008

■ Section 1

General requirements

1.1 Application

1.1.1 The requirements of this Part apply to yachts with an overall length, L_{OA} (as defined in Pt 3, Ch 1.6.2.4) of 24 m or greater or of 3000 gross registered tonnage or less and intended for the carriage of 12 passengers or less, and service craft (see also 1.1.2(c)) built in accordance with these Rules.

1.1.2 Consideration will be given to the acceptance of fire safety measures:

- (a) which have been prescribed and approved by the Government of the flag state, ~~provided they are deemed to provide a level of fire safety acceptable to Lloyd's Register (hereinafter referred to as 'LR');~~
- (b) where the arrangements are considered equivalent to those required by these Rules as a result of risk assessment studies; or
- (c) where the arrangements are considered acceptable compared to those required by these Rules, due cognisance having been taken of any restricted service limits.

■ Section 2

Definitions

2.3 Flame spread

2.3.2 **Not readily ignitable** means that the surface thus described will not continue to burn for more than 20 seconds after the removal of a suitable impinging test flame.

Part 17, Chapter 3

Fire Protection, Detection and Extinction - Yachts

Effective date 1 July 2008

■ Section 1

General requirements

1.1 Application

1.1.3 The fire safety measures for yachts of overall length greater than 24 m, but not greater than 50 m Rule length, are covered by Section 2, and are to be complied with. For yachts with an overall length of 24 m or more, and less than 500 gt, the fire safety measures are to comply with Section 2.

1.1.4 The fire safety measures for yachts of greater than 50 m Rule length are covered by Section 3 and are to be complied with. For yachts 500 gt or more, the fire safety measures are to comply with Section 3.

■ Section 2

Fire safety measures for yachts of overall length greater than 24 m but not greater less than 50 m Rule length 500 gt

2.4 Structural fire protection

2.4.3 Where forming escape routes, corridor bulkheads and ceilings are to be constructed to a 'B-0' Class standard such that:

- (a) corridors having a length of 7 m or more (measured along the centreline of the corridor), have bulkheads that extend from deck to deck unless continuous 'B' Class ceilings are fitted on both sides of the bulkhead, in which case bulkheads may terminate at the continuous ceiling; or
- (b) corridors having a length of less than 7 m, may be constructed of combustible materials provided they have a non-combustible core such that the 'B-0' Class standard fire test criteria are met.

Part 17, Chapter 3

2.4.4 Stairways connecting spaces below the main deck to the deck above are to be protected at one level by at least 'B-0' Class divisions and self-closing doors.

2.5 Materials

2.5.1 Except in refrigerated compartments of service spaces, all insulation (e.g. fire and comfort) other than fire insulation is to be of non-combustible materials not-readily ignitable type. Fire insulation is to be of the non-combustible type.

■ Section 3 Fire safety measures for yachts of greater than 50 m Rule length 500 gt or more

Section numbering in brackets reflects any Section re-numbering necessitated by any of the Notices that update the current version of the Rules for Special Service Craft.

Part 16, Chapter 2

3.2.6(a)(ii)	Reference to 3.2.5 <i>now reads</i> 3.2.7.
3.2.6(a)(iii)	Reference to 3.2.7 <i>now reads</i> 3.2.9.
3.2.6(b)(iii)	Reference to 3.2.7 <i>now reads</i> 3.2.9.
3.2.7	Reference to 3.2.6 <i>now reads</i> 3.2.8.
3.2.7(a)(i)	Reference to 3.2.5 <i>now reads</i> 3.2.7.
3.2.7(a)(ii)	Reference to 3.2.5 <i>now reads</i> 3.2.7.
3.2.14	Reference to 3.2.5 <i>now reads</i> 3.2.7.
3.3.1	Reference to 3.2.4 <i>now reads</i> 3.2.6. Reference to 3.2.9 <i>now reads</i> 3.2.11. Reference to 3.2.11 <i>now reads</i> 3.2.13. Reference to 3.2.13 <i>now reads</i> 3.2.15.
3.3.4	References to 3.3.5 <i>now read</i> 3.3.7. (Four instances).
3.3.6(a)(ii)	References to 3.3.7 <i>now read</i> 3.3.9. (Two instances).
3.3.6(a)(iii)	References to 3.3.7 <i>now reads</i> 3.3.9.
3.3.6(b)(iii)	References to 3.3.7 <i>now read</i> 3.3.9. (Two instances).
3.3.7	Reference to 3.3.6 <i>now reads</i> 3.3.8.
3.3.7(a)(i)	Reference to 3.3.5 <i>now reads</i> 3.3.7.
3.3.7(a)(ii)	Reference to 3.3.5 <i>now reads</i> 3.3.7.
3.4.1	Reference to 3.2.4 <i>now reads</i> 3.2.6. Reference to 3.2.8 <i>now reads</i> 3.2.10. Reference to 3.2.13 <i>now reads</i> 3.2.15.
6.9.1	Reference to 3.2.12 <i>now reads</i> 3.2.14.
14.3.1	Reference to 3.2.5 <i>now reads</i> 3.2.7. Reference to 3.2.7 <i>now reads</i> 3.2.9. Reference to 3.3.4 <i>now reads</i> 3.3.6. Reference to 3.3.6 <i>now reads</i> 3.3.8.

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